vegnar
GFRP

GLASS FIBRE REINFORCED POLYMER (GFRP) REBARS

The New Strength of Construction

VEGNAR GFRP
COMPANY PROFILE

About Us

Vegnar GFRP is a manufacturer of highquality Glass Fiber Reinforced Polymer (GFRP) composite reinforcement products. We supply GFRP rebar (straight and bent), mesh/grids, and custom composite profiles for civil, infrastructure, marine, industrial, and specialty construction applications. Our priority is to combine advanced materials, precise manufacturing, and rigorous quality control to deliver durable, corrosionresistant reinforcement solutions.

Vision & Mission

Vision

To be a global leader in composite reinforcement, championing durable, sustainable, high performance infrastructure.

Mission

- Produce GFRP products that resist corrosion, reduce maintenance, and enhance life span of concrete structures.

- Maintain strict quality control (multi stage QC) to ensure consistency and reliability.

- Serve clients across infrastructure, marine, industrial, and building sectors with technical support, custo design, and timely delivery.

- Advance sustainable construction by replacing conventional materials where GFRP offers clear long term benefits.

Tackling Corrosion
in India's Infrastructure

Corrosion is a silent threat to India's infrastructure, damaging bridges, highways and industrial structures exposed to humidity, saline air and pollutants. It leads to costly repairs, structural failures and environmental strain, compromising safety and longevity.

The Cost of Corrosion

Economic Impact: Corrosion leads to frequent repairs, increased maintenance costs, and reduced service life of structures. It is estimated that India incurs annual losses worth billions due to corrosion-related damages.

Safety Concerns: Structural degradation caused by corroding steel poses significant risks to public safety, with incidents of collapses and failures becoming increasingly common.

Environmental Fallout: Repeated repairs and replacements consume additional resources, adding to the environmental burden.

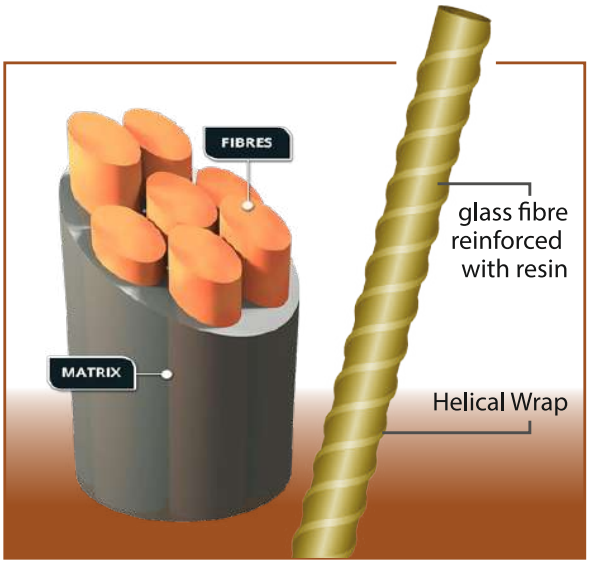
The Urgent Need for a Corrosion-Resistant Solution

Traditional steel reinforcement, though strong and versatile, is vulnerable to corrosion, especially in coastal, marine and chemically aggressive environments. To safeguard India's infrastructure and ensure its longevity, the industry needs a material that combines strength, durability and corrosion resistance.

What are
GFRP Rebars?

Glass Fibre Reinforced Polymer Rebars also known as GFRP Rebars are a cutting-edge solution designed to meet the demands of modern construction in India. These are made up of Glass fibre & Resin.

GFRP Rebars have been developed as a non-corrosive solution for reinforcement. They offer superior durability andVperformance in harsh environments like coastal areas, chemical industries and water infrastructure.



Features

- Lightweight
- Corrosion-resistant
- Strong
- Cost-effective
- Low Maintenance
- Longer Life
- Easy Handling
- Strong Bond Strength
- Customised Lengths
- Non-Conductive
- Non-Magnetic
- Non-Electromagnetic

Manufacturing Process

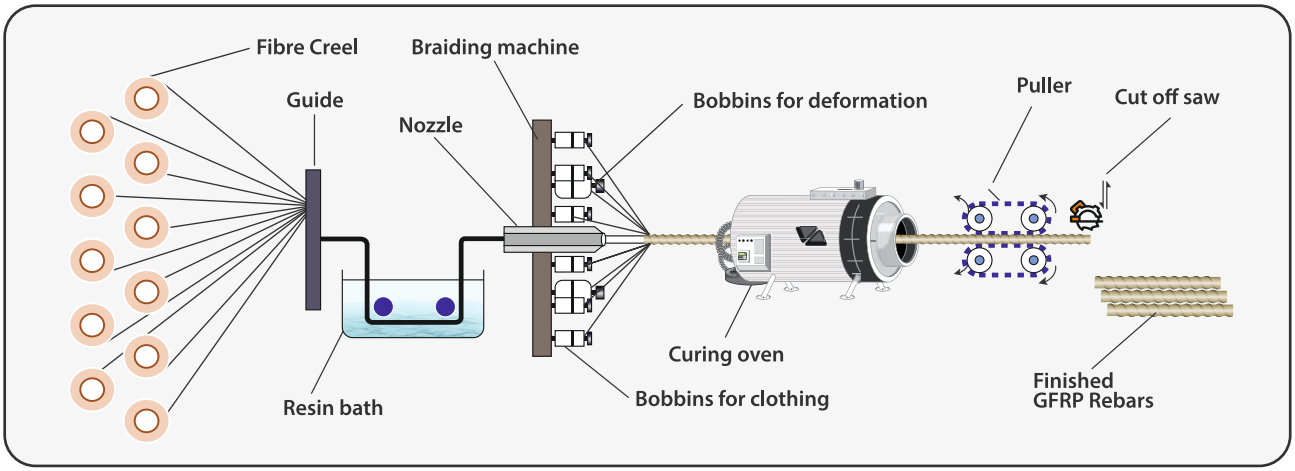
Manufactured through a highly controlled pultrusion process

Continuous glass fibres are drawn from spools and passed through a resin bath, where they are coated with a polymer resin, typically made of vinyl ester or epoxy

This resin-coated fibre bundle is then pulled through a heated die, which shapes it into the required diameter and ensures uniform coating of the resin around the fibers

The die also initiates the curing process, where heat solidifies the resin to form a rigid, solid composite material

Once the curing is complete, the GFRP rebar is cut to the desired lengths and surface-treated to enhance bonding with concrete



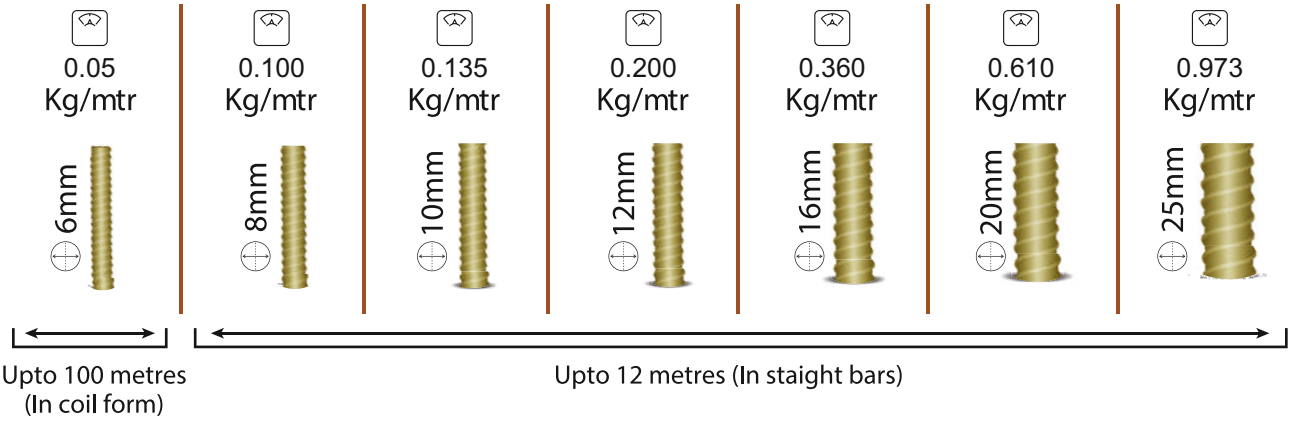
Bend | 90-degree bend | Hook bend | 45 degree bend | S- Bend | U – Bend | Offset Bend

* Note : Actual weight may vary as per tolerances

PRODUCT
PORTFOLIO

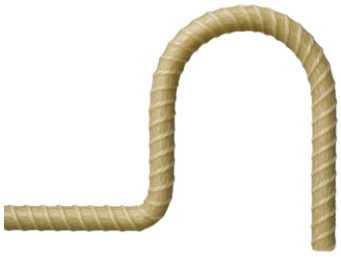
Product Specifications

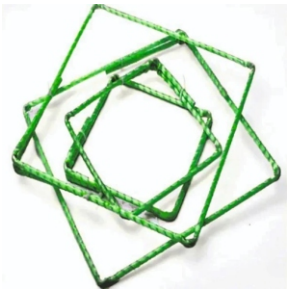
Staight Bar



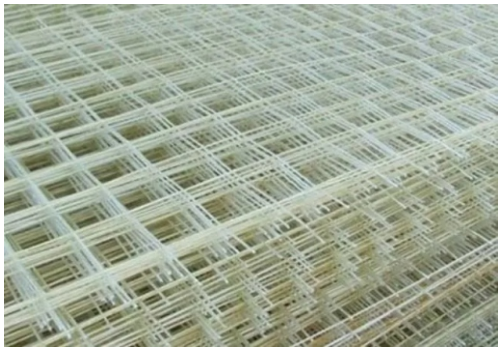
Bend Bar

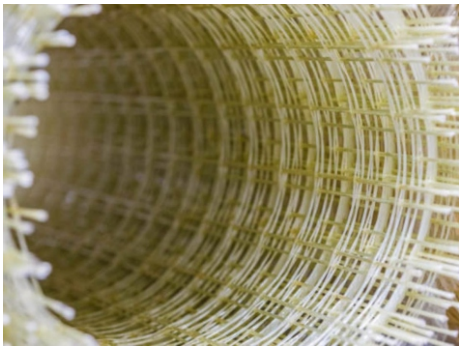
Bend | 90-degree bend | Hook bend | 45 degree bend | S- Bend | U – Bend | Offset Bend





Mesh Rebar





Technical Specification

of GFRP Rebars

FRP Rebar (6, 8, 10, 12 mm)

S.No.	Properties	UOM	Tolerance	IS 18256 : 2023	VEGNAR GFRP Rebar
1	Glass Content	%	±5	≥ 75	≥ 80
2	Tensile Strength	Mpa	min.	700 - 850	800 - 1000
3	Tranverse Shear Tensile	Mpa		≥ 130	135 - 200 Mpa
4	Tensile Modulus of Elasticity	Mpa		≥ 45000	45000 - 55000
5	Ultimate Tensile Strain	%		≥ 1.1	≥ 1.1
6	Glass Transition Temperature	°C		≥ 100	101-115
7	Moisture Absorption (short hrs.)	%	min.	≤ 0.25	≤ 0.25
8	Moisture Absorption (long term)	%	min.	≤ 1	≤ 1
9	Alkaline Resistance	Mpa		≥ 80 % of mean ultimate tensile force of pristine bars	≥ 80 % of mean ultimate tensile force of pristine bars
10	Bond Strength	Mpa		≥ 7.6	8-15

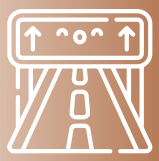
FRP Rebar (16, 20, 25 mm)

S.No.	Properties	UOM	Tolerance	IS 18256 : 2023	VEGNAR GFRP Rebar
1	Glass Content	%	±5	≥ 75	≥ 80
2	Tensile Strength	Mpa	min.	550 - 650	16 mm ≥ 700 20 mm ≥ 650 25 mm ≥ 650
3	Tranverse Shear Tensile	Mpa		≥ 130	135 - 200 Mpa
4	Tensile Modulus of Elasticity	Mpa		≥ 45000	45000 - 55000
5	Ultimate Tensile Strain	%		≥ 1.1	≥ 1.1
6	Glass Transition Temperature	°C		≥ 100	101-115
7	Moisture Absorption (short hrs.)	%	min.	≤ 0.25	≤ 0.25
8	Moisture Absorption (long term)	%	min.	≤ 1	≤ 1
9	Alkaline Resistance	Mpa		≥ 80 % of mean ultimate tensile force of pristine bars	≥ 80 % of mean ultimate tensile force of pristine bars
10	Bond Strength	Mpa		≥ 7.6	8-15 Mpa

*Note: Values may vary as per actuals.

Spectrum of **Applications**

ROADS AND HIGHWAYS



- Approach Slabs
- Walkways of Foot Over Bridge
- Slab Culverts
- "Bridge cum Bandhara, including Deck Slabs and Barriers between Piers"
- Concrete Roads including Jointed Plain Concrete Pavement
- Continuously- Reinforced Concrete Pavements (CRCP)
- Short-Panel Concrete Pavements (both cast-in-situ and precast)
- Retaining Walls
- Noise barriers
- Box Culverts
- Crash Barriers & Bridge Parapets
- Pedestrian Parapets and Railings
- Bulkheads and Bulkhead Copings
- Drains
- Plain Concrete Components

INDUSTRIAL/ COMMERICALS

- Deck slabs
- Underground Water Tanks
- Sewerage Treatment Plants
- Flooring
- Septic Tanks
- Chemical & wastewater treatment plants
- Boundary Walls

REAL ESTATE

- Parking Garages
- Drainage
- Pavements/Internal Road
- Swimming Pools
- Sewage Treatment Plants
- Flooring
- Under Water Tanks
- Grade Slabs

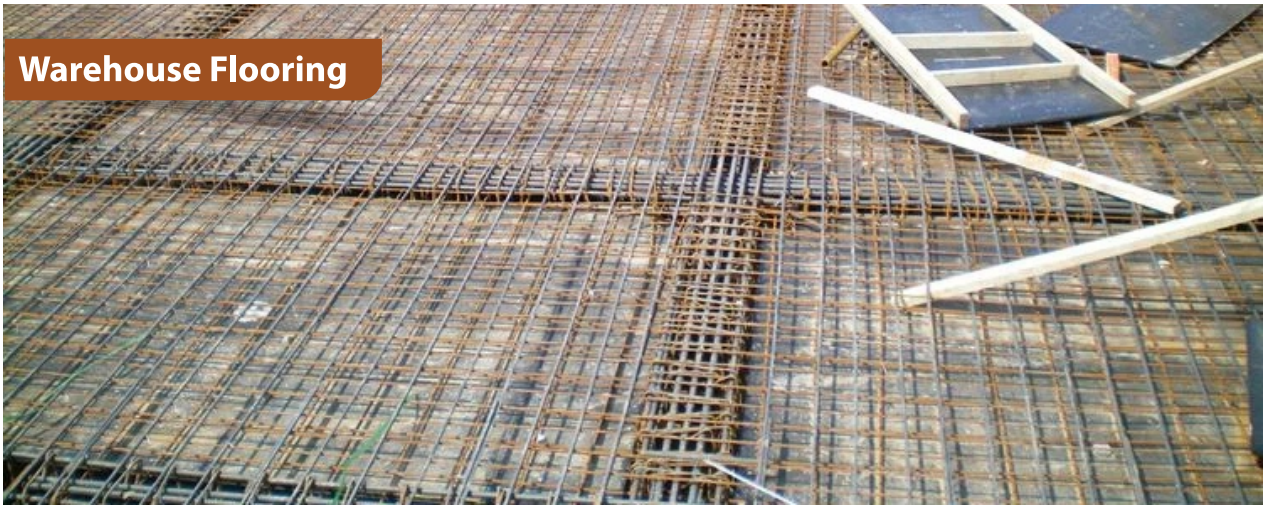
BRIDGES AND TUNNELS

- Tunnel Eyes
- Mechanically Stabilised Earth Wall Panels and Copings
- Retaining Walls
- Bridge Decks and Bridge Deck overlays
- Noise barriers
- Crash Barriers and Bridge Parapets

AIRPORTS, PORTS & METRO STATIONS

- Runways
- Drains
- Sewage Treatment Plants
- Underground Water Tanks
- Noise barriers
- Deck slabs
- Non-Structural Walls

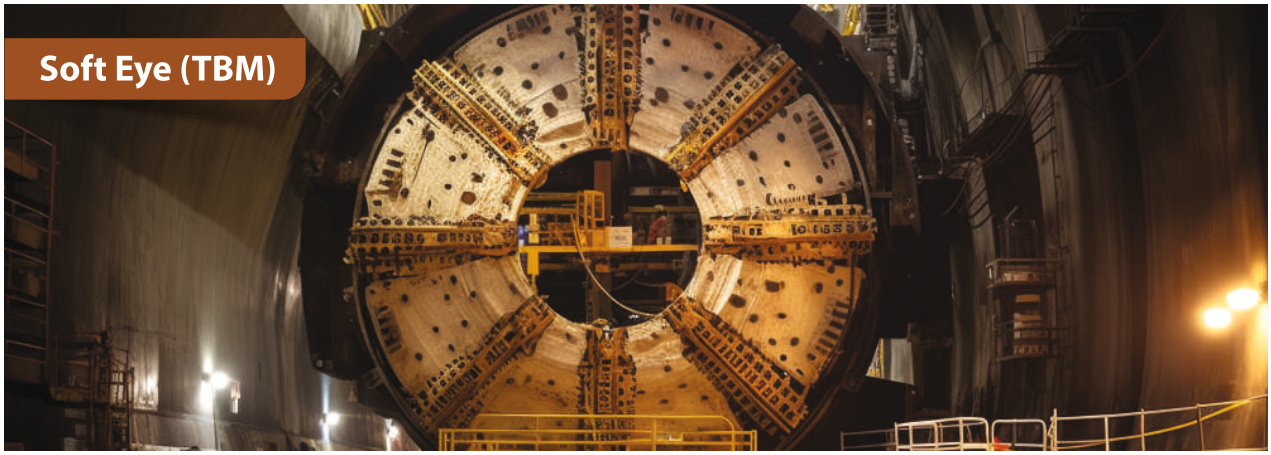
Applications



Drains

Water tanks (UG, Pools)

Soft Eye (TBM)



Roads

Benefits of GFRP Rebars

over conventional rebars

HIGH TENSILE STRENGTH

600-1200 Mpa

(500-550 Mpa for conventional rebars)

LOW DENSITY

~1600-1900Kg/m^3

(~7850 Kg/m^3 or conventional rebars)

REDUCED RISK OF THERMAL CRACKING

Thermal expansion coefficient closer to concrete (conventional rebar can expand & contract more significantly)

EASE OF INSTALLATION

~120-150 Mpa

(~200 Mpa for conventional rebars)

THERMAL INSULATION

High

(Low for conventional rebars)

CORROSION-RESISTANT

100% corrosion-free

(Conventional rebars prone to corrosion)

NO NEED OF COATING TO RESIST CORROSION

(Conventional rebas need coating which adds costs & complexity)

NON-MAGNETIC & NON-CONDUCTIVE

(Conventional rebars are Magnetic - which can affect sensitive equipment)

NO MAINTENANCE REQUIRED

Saves maintenance costs

(Conventional rebar needs inspections & periodic maintenance to address corrosion)

HIGH STRENGTH TO WEIGHT RATIO

Making them lighter for the same strength

(Conventional rebars have a low ratio)

HIGHLY DURABILE

Resists chemicals and moisture - more durable

(Conventional rebars have limited durability and are prone to corrosion)

LONG SERVICE LIFE

75+ years

(20-30 years for conventional rebars, depending on exposure)

Case Studies: Global Applications of GFRP Rebars

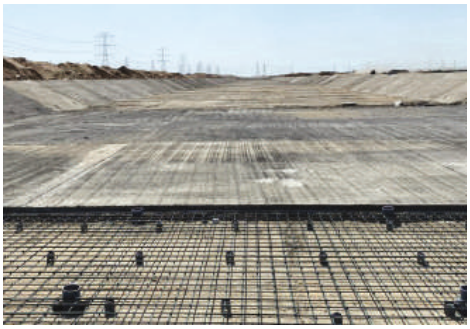
Glass Fiber Reinforced Polymer (GFRP) rebars are gaining worldwide acceptance as a sustainable and high-performance alternative to steel reinforcement. Below are some prominent case studies demonstrating their successful applications across diverse infrastructure projects:

Kochi Metro Rail, India

GFRP rebars were incorporated to improve durability and corrosion resistance in the harsh, saline coastal environment of Kochi. This ensured longer service life with reduced maintenance costs.

Indian Institute of Technology (IIT) Hyderabad, India

The new IIT Hyderabad campus made extensive use of GFRP rebars, which helped reduce the overall carbon footprint of the structure and guaranteed long-term sustainability.



Jizan Flood Mitigation Channel, Saudi Arabia

Recognized as the world's largest GFRP project, this massive flood mitigation channel in Jizan Economic City utilized GFRP rebars to combat corrosion risks while ensuring structural reliability under extreme conditions.

Zurich Airport, Switzerland

Specialized GFRP reinforcement was used in critical zones to enhance safety and performance for areas subjected to heavy aircraft ground maneuvering loads.

Wehrhahn Line (Düsseldorf Subway), Germany

The new urban transport route leveraged GFRP rebars to provide durability and safety in underground environments, free from the corrosion issues typically associated with steel reinforcement.

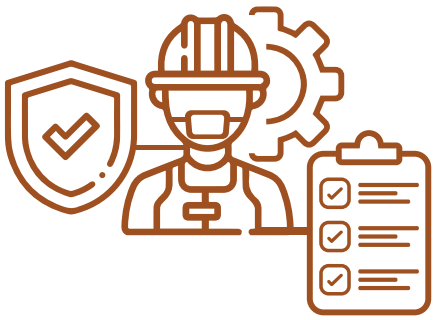
Mina Zayed Tunnel (Zayed Road Network), Abu Dhabi, UAE

For the tunnel's secant pile construction, GFRP rebars were applied to increase resistance against corrosion in a high-salinity coastal environment.

Tunnels (Europe & Japan)

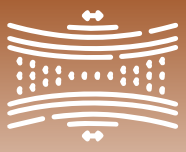
Across multiple tunnel projects, GFRP rock bolts and rebars have been used for structural support and lining reinforcement, effectively eliminating corrosion risks while extending service life.

Safety **Guidelines**

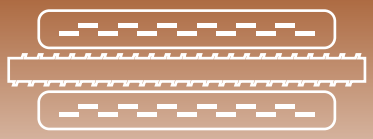


Always wear gloves, safety glasses, and dust masks to protect against splinters and dust.

Avoid bending, GFRP rebars are strong but not ductile like steel.



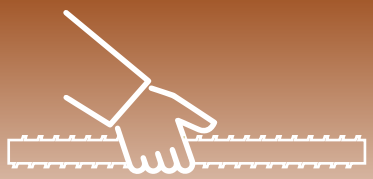
Use non-metallic tools (e.g., plastic or rubber mallets) to prevent damage to the surface.



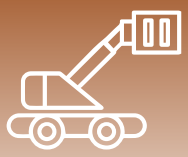
Store on flat or on padded supports to prevent deformation.

Cut with diamond or carbide blades and avoid inhaling dust; use water or dust collection systems when cutting.

Follow manufacturer guidelines for safe handling and installation.



Handle with care to avoid sharp edges from exposed fibers.



When lifting heavy bundles, use appropriate lifting equipment and techniques to prevent injury.

Ensure rebar is properly secured during installation to avoid accidental shifting or falls.

Fire Safety **Guidelines**

GFRP rebar has limited fire resistance; ensure adequate concrete cover to protect it from high temperatures. Avoid direct flame exposure during installation and handling, and follow local fire safety regulations.

Our Valuable
CLIENTS

We are proud to be trusted by a diverse range of clients across industries, including importers, distributors, consultants, and leading companies in construction, ceramics, hardware, and chemicals.

Featured Clients & Partners

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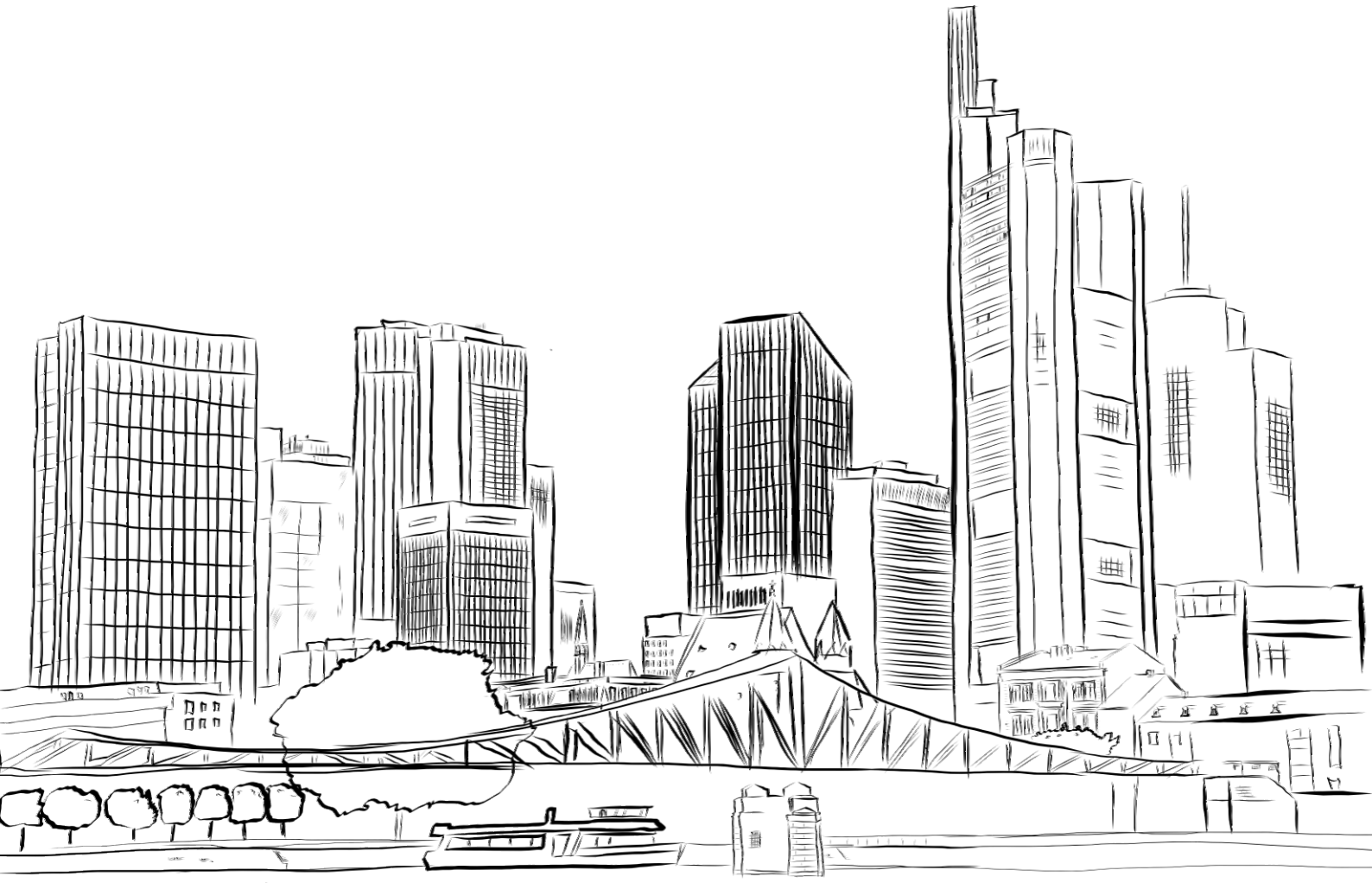

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